It will thus be apparent to one skilled in the art the that invention has a number of different applications within the scope of the claims and has anumber of advantages. For example, the invention provides for a dynamic and flexible approach to down-loading or pre-loading of the rule information, and to the use of encoded signals sent either from a mobile station or a base station. The invention may also find application in capsule type cellular radio systems.

Claims

1. A mobile station for communicating with a radio telecommunications system, the mobile station comprising:

means for communicating with the radio telecommunications system;

means for storing rule information relating to predetermined coding rules;

means for retrieving said rule information;

means for decoding, using the retrieved rule information, signals received from the radio telecommunications system.

2. A mobile station for communication over a telecommunications system, the mobile station comprising:

means for communicating with the radio telecommunications system;

means for storing and retrieving rule information relating to predetermined coding rules;

means for encoding, using the retrieved rule information, signals to be transmitted to the radio telecommunications system.

3. A first mobile station for communicating with second mobile station in a telecommunications system, the first mobile station comprising:

means for storing rule information relating to predetermined coding rules;

means for communicating with the second mobile station; means for retrieving said rule information; means for encoding or decoding, using the retrieved rule information, signals to be transmitted to or signals received from the second mobile station, which signals use the predetermined coding rules.

4. A mobile station in accordance with claim 1, 2 or 3, wherein the rule information is down-loaded to the storing means during registration of the mobile station with the telecommunications system.

5. A mobile station in accordance with claim 1, 2 or 3, wherein the rule information is down-loaded to the storing means over a dedicated communications channel.

6. A mobile station in accordance with claim 1, 2 or 3, wherein the rule information is down-loaded to the storing means during a dedicated communication period separate from the communication required to register the mobile station with the telecommunications system.

7. A mobile station in accordance with claim 1, 2 or 3, wherein the rule information is down-loaded to the storing means as pre-loaded information, prior to registration of the mobile station with the telecommunications system.

8. A mobile station in accordance with any previous claim, wherein the rule information is up-dated each time that the mobile station enters a new area of the radio telecommunications system.

9. A mobile station in accordance with any previous claim, wherein the rule information is up-dated each time that the mobile station enters a new registration area of the radio telecommunications system

10. A mobile station in accordance with any previous claim, wherein the rule information is up-dated each time that the mobile station enters a new cell of the radio telecommunications system

11. A mobile station in accordance with any previous claim in so far as dependent upon claim 1, wherein the rule information enables the mobile station to decode broadcast information from the telecommunications system.

12. A mobile station in accordance with any previous claim in so far as dependent upon claim 1 wherein the rule information enables mobile station to decode broadcast information from the telecommunications system, the broadcast information being partly encoded in accordance with the predetermined decoding rules, and partly in unencoded format.

13. A mobile station in accordance with any previous claim, where the radio telecommunications system is a digital radio telecommunications system

14. A radio telecommunications system comprising:

at least one base station;

at least one mobile station;

the at least one base station including means for transmitting signals to and means for receiving signals from the at least one mobile station;

the at least one mobile station including means for receiving signals from and means for transmitting signals to the at least one base station;

the mobile station including means for storing rule information relating to predetermined coding rules;

the mobile station also including means for retrieving said rule information; and

the mobile station further including means for decoding, using the retrieved rule information, signals transmitted by the base station using the predetermined coding rules.

A radio telecommunications system comprising:

at least one base station;

at least one mobile station;

the at least one base station including means for transmitting signals to and means for receiving signals from the at least one mobile station;

the at least one mobile station including means for receiving signals from and means for transmitting signals to the at least one base station;

the mobile station including means for storing rule information relating to predetermined coding rules;

the mobile station also including means for retrieving said rule

information; and

the mobile station further including means for encoding, using the retrieved rule information, signals to be transmitted to the base station using the predetermined coding rules.

16. A radio telecommunications system comprising:

at least one base station;

a plurality of mobile stations;

the at least one base station including means for transmitting 20 signals to and means for receiving signals from each mobile station;

each mobile station including means for receiving signals from and means for transmitting signals to the at least one base station;

each mobile station including means for storing rule information relating to predetermined coding rules;

each mobile station also including means for retrieving said rule information; and

each mobile station further including means for encoding or decoding, using the retrieved rule information, signals to be transmitted to or signals received from a second mobile station within the radio telecommunications system which signals use the predetermined coding rules.

17. A radio telecommunications system in accordance with claim 14, 15 or 16, wherein the rule information is down-loaded to the storing means of the mobile station during registration of the mobile station with the telecommunications system.

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18. A radio telecommunications system in accordance with claim 14, 15 or 16, wherein the rule information is down-loaded to the storing of the mobile station means over a dedicated communications channel.

19. A radio telecommunications system in accordance with claim 14, 15 or 16, wherein the rule information is down-loaded to the storing of the mobile station means during a dedicated communication period separate from the communication required to register the mobile station with the telecommunications system.

20. A radio telecommunications system in accordance with claim 14, 15 or 16, wherein the rule information is down-loaded to the storing of the mobile station means as pre-loaded information, prior to registration of the mobile station with the telecommunications system.

21. A radio telecommunications system in accordance with any of claims 14 to 20, wherein the rule information is up-dated each time that the mobile station enters a new area of the radio telecommunications system

22. A radio telecommunications system in accordance with any of claims 14 to 21, wherein the rule information is up-dated each time that the mobile station enters a new registration area of the radio telecommunications system

23. A radio telecommunications system in accordance with any of claims 14 to 22, wherein the rule information is up-dated each time that the mobile station enters a new cell of the radio telecommunications system

24. A radio telecommunications system in accordance with any of claims 14 to 23 in so far as dependent upon claim 14, wherein the rule information enables the mobile station to decode broadcast information from the telecommunications system.

25. A radio telecommunications system in accordance with any of claims 14 to 24 in so far as dependent upon claim 14, wherein the rule information enables mobile station to decode broadcast information from the telecommunications system, the broadcast information being partly encoded in accordance with the predetermined decoding rules, and partly in unencoded format.

26. A radio telecommunications system in accordance with any of claims 14 to 25, where the radio telecommunications system is a digital radio telecommunications system.

27. A method of decoding signals sent by a radio telecommunications system said system comprising at least one base station and at least one mobile station, comprising:

storing, in the mobile station, rule information relating to predetermined coding rules;

retrieving said rule information;

decoding, using the retrieved rule information, signals received 25 from the radio telecommunications system

28. A method of encoding signals sent to a radio telecommunications system, said system comprising at least one base station and at least one mobile station, comprising:

storing, in the mobile station, rule information relating to predetermined coding rules;

retrieving said rule information;

encoding, using the retrieved rule information, signals to be transmitted to the radio telecommunications system

29. A method of encoding or decoding signals sent from a first mobile station to a second mobile station within a radio telecommunications system comprising:

storing, in each mobile station, rule information relating to predetermined coding rules;

retrieving said rule information;

encoding or decoding, using the retrieved rule information, signals to be transmitted to or signals received from the second mobile station, which signals use the predetermined coding rules.

30. A method in accordance with claim 27, 28 or 29, comprising down-loading the rule information to the storing means during registration of the mobile station with the telecommunications system.

31. A method in accordance with claim 27, 28 or 29, comprising down-loading the rule information to the storing means over a dedicated communications channel.

32. A method in accordance with claim 27, 28 or 29, comprising down-loading the rule information to the storing means during a dedicated communication period separate from the communication required to register the mobile station with the

telecommunications system.

33. A method in accordance with claim 27, 28 or 29, comprising down-loading the rule information to the storing means as pre-loaded information, prior to registration of the mobile station with the telecommunications system.

34. A method in accordance with any of claims 27 to 33, comprising up-dating the rule information each time that the mobile station enters a new area of the radio telecommunications system

35. A method in accordance with any of claims 27 to 34, comprising up-dating the rule information each time that the mobile station enters a new registration area of the radio telecommunications system.

36. A method in accordance with any of claims 27 to 35, comprising up-dating the rule information each time that the mobile station enters a new cell of the radio telecommunications system

37. A method in accordance with any of claims 27 to 36 in so far as dependent upon claim 26 comprising enabling the mobile station to decode, using the rule information, broadcast information from the telecommunications system.

38. A method in accordance with any of claims 27 to 37 in so far as dependent upon claim 26, comprising enabling the mobile station to decode, using the rule information, broadcast information from the telecommunications system, the broadcast information being partly encoded in accordance with the predetermined decoding rules, and partly in unencoded format.

39. A method in accordance with any of claims 28 to 38, where the radio telecommunications system is a digital radio telecommunications system.

40. A radio telecommunications system for broadcasting encoded broadcast information over a coverage area, comprising:

at least one mobile station;

the at least one base station including means for transmitting, over the coverage area, generic broadcast information in an unencoded format;

the at least one mobile station including means for receiving said generic broadcast information at the least one base station;

the mobile station including means for establishing a connection between the mobile station and the base station, using the generic broadcast information;

the base station including means for transmitting, over the connection to the mobile station, rule information relating to predetermined coding rules;

the mobile station also including means for storing rule information;

the mobile station further including means for retrieving said rule information;

the base station also including means for transmitting, over the coverage area, non-generic broadcast information encoded using the predetermined coding rules; and

wherein said mobile station further includes means for 20 decoding, using the retrieved rule information, the non-generic broadcast information transmitted by the base station.

41. A radio telecommunications system in accordance with claim 40, where, in the alternative to the base station including means for transmitting, over the connection to the mobile station, rule information relating to predetermined coding rules, the rule information is down-loaded to the storing means of the mobile station means as pre-loaded information.

42. A radio telecommunications system in accordance with claim 40, wherein the rule information is up-dated each time that the mobile station enters a new area of the radio telecommunications system.

43. A radio telecommunications system in accordance with claims 40, wherein the rule information is up-dated each time that the mobile station enters a new registration

area of the radio telecommunications system

44. A radio telecommunications system in accordance with claims 40, wherein the rule information is up-dated each time that the mobile station enters a new cell of the radio telecommunications system.

45. A radio telecommunications system in accordance with any of claims 40 to 44, the non-generic broadcast information is in partly encoded in accordance with the predetermined decoding rules, and partly in unencoded format.

46. A radio telecommunications system in accordance with any of claims 40 to 45, where the radio telecommunications system is a digital radio telecommunications system.

47. A method of broadcasting encoded broadcast information over a coverage area in a radio telecommunications system, said system comprising at least one base station and at least one mobile station, comprising:

transmitting generic broadcast information in an unencoded format over the coverage area;

receiving said generic broadcast information at said mobile station;

said mobile station using the generic broadcast information to establish a connection between the mobile station and the base station;

transmitting, over the connection and from the base station to the mobile station, rule information relating to predetermined coding rules;

transmitting, from the base station, non-generic broadcast information encoded using the predetermined coding rules; and

said mobile station using said rule information to decode said non-generic broadcast information.

48. A method in accordance with claim 47, comprising, in the alternative to the base station transmitting, over the connection to the mobile station, rule information relating to predetermined coding rules, the rule information is down-loaded to the storing

means of the mobile station means as pre-loaded information.

49. A method in accordance with claim 47, comprising updating the rule information each time that the mobile station enters a new area of the radio telecommunications system

50. A method in accordance with claims 47, comprising updating the rule information each time that the mobile station enters a new registration area of the radio telecommunications system.

51. A method in accordance with claims 47, comprising updating the rule information each time that the mobile station enters a new cell of the radio telecommunications system.

52. A method in accordance with any of claims 47 to 51, comprising transmitting the non-generic broadcast information in partly encoded in accordance with the predetermined decoding rules, and partly in unencoded format.

53. A method in accordance with any of claims 47 to 52, where the radio telecommunications system is a digital radio telecommunications system.

54. A method of programming, by a radio telecommunications system a mobile station over a connection, said system comprising at least one base station, comprising:

establishing a connection between the mobile station and the at least one base station;

the base station transmitting, over the connection, rule information relating to predetermined coding rules;

programming the mobile station with said rule information; retrieving said rule information;

the mobile station encoding or decoding, using the retrieved rule information, signals to be transmitted to or received from the radio telecommunications system.

55. A method of programming, by a radio telecommunications system .a mobile station over a connection, said system comprising at least one base station and at least one other mobile station, comprising:

establishing a connection between the mobile station and the at least one base station;

the base station transmitting, over the connection, rule information relating to predetermined coding rules;

programming the mobile station with said rule information; retrieving said rule information;

the mobile station encoding or decoding, using the retrieved rule information, signals to be transmitted to or received from the at least one other mobile station.

56. A method in accordance with claims 54 or 55, comprising updating the rule information each time that the mobile station enters a new area of the radio telecommunications system.

57. A method in accordance with claims 54 or 55, comprising updating the rule information each time that the mobile station enters a new registration area of the radio telecommunications system

58. A method in accordance with claims 54 or 55, comprising updating the rule information each time that the mobile station enters a new cell of the radio telecommunications system.

59. A method in accordance with any of claims 54, or 56 to 58 in so far as dependent upon claim 55, comprising enabling the mobile station to decode, using the rule information, broadcast information from the telecommunications system.

60. A method in accordance with any of claims 54, or 56 to 59 in so far as dependent upon claim 54, comprising enabling the mobile station to decode, using the rule information, broadcast information from the telecommunications system, the broadcast information being partly encoded in accordance with the predetermined decoding rules,

and partly in unencoded format.

61. A method in accordance with any of claims 54 to 60, where the radio telecommunications system is a digital radio telecommunications system.

62. Apparatus substantially as hereinbefore described.

63. A method substantially as hereinbefore described.

64. Apparatus substantially as hereinbefore described with reference to, or as illustrated by, any of figures 1 to 4.

65. A method substantially as hereinbefore described with reference to, or as illustrated by, any of figures 1 to 4.